# SYNOPSIS

## PhD in Physical Education

**EFFECTS OF NEUROMUSCULAR TRAINING AND YOGA TRAINING ON SELECTED MOTOR QUALITIES OF PUBERTAL TRIBAL GIRL STUDENTS**


**Submitted By**

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## INTRODUCTION

"Tribal" generally refers to groups of indigenous people who share a common ancestry, language, culture, and social structure, often connected to specific territories or regions. These communities tend to have distinct ways of life, deeply rooted in traditions, spirituality, and sustainable interactions with their natural environment. Tribes, with their distinct cultural identities, often face numerous challenges driven by economic struggles, cultural barriers, and inadequate infrastructure. These difficulties are magnified during puberty, a period of rapid physical and hormonal changes that can affect students' motivation and focus, leading to disengagement from school.

Physical development in children and adolescents, including tribal girls, is a critical aspect of their overall well-being. In tribal communities like those in Wayanad, where lifestyle and environment differ from urban areas, the physical development of girls is influenced by factors such as nutrition, physical activity, and healthcare. However, many tribal girls face challenges that hinder their optimal physical growth due to socio-economic and environmental constraints.

Neuromuscular training is a strength and fitness method that combines sport-specific and fundamental movements to improve skills and health-related fitness. At the same time, yoga, a holistic practice rooted in ancient Indian traditions, addresses physical, mental, and spiritual well-being. Yoga techniques like asanas (postures), pranayama (breath control), and meditation help students enhance their physical flexibility, mental clarity, and emotional stability. These practices are especially beneficial during puberty, as they provide tools for managing stress, improving concentration, and maintaining emotional balance, which can positively impact students' academic performance and overall well-being.

## BACKGROUND OF THE STUDY

According to the World Health Organization (2020), children and young people should engage in at least 60 minutes of moderate to vigorous physical activity daily to promote and protect healthy heart function, increase bone and muscle strength, improve mood, lower the risk of depression and reduce the risks of obesity, osteoporosis and diabetes.

Pubertal tribal girls face unique challenges, including limited access to sports facilities and culturally relevant training options. To reduce dropout rates among tribal students from education, the government has introduced initiatives like establishing shelters near schools and offering nutritious breakfast and meals. By building physical strength and skills, this form of training empowers students to participate more actively in school sports and physical education, offering them a sense of achievement and self-confidence.

Additionally, different combinations of training methods can foster personal growth, discipline and confidence, helping students overcome societal pressures such as early marriage, which often curtails their education. With improved physical and mental capabilities, tribal students may be more likely to pursue higher-level academic and athletic opportunities, breaking the cycle of dropout and unlocking new avenues for success.

## STATEMENT OF THE PROBLEM

To assess the effects of neuromuscular training and yoga training on selected motor qualities of pubertal tribal girl students

## OBJECTIVES OF THE STUDY

The following objectives were made to fulfill the purpose of the study.

1. To evaluate the effects of neuromuscular training on selected motor qualities among pubertal tribal girl students.
2. To assess the effects of yoga training on selected motor qualities among pubertal tribal girl students.
3. To compare the effects of neuromuscular training and yoga training on selected motor qualities among pubertal tribal girl students.
4. To assess the effects of neuromuscular training and yoga training on selected motor qualities of pubertal tribal girl students by establishing a baseline for comparison before and after the interventions.

## SIGNIFICANCE OF THE STUDY

1. This study will help to assess how neuromuscular and yoga training improve the efficiency and function of pubertal tribal girl students body systems
2. To increase sports participation among pubertal tribal girl students, potentially reducing dropout rates and fostering athletic talent within these communities.
3. By improving motor skills and physical fitness, empowering them to pursue education and participate in sports tournaments, offering new opportunities for personal growth and avoiding early marriages.
4. Identifying and nurturing athletic talent within tribal communities, providing opportunities for tribal youth to excel in regional, national, international and Olympic sports.

## HYPOTHESES

1. It was hypothesized that the neuromuscular training would produce significant changes in the selected motor qualities in pubertal tribal girl students.
2. It was hypothesized that the yoga training would produce a positive impact on the development of certain motor qualities in pubertal tribal girl students.
3. It was hypothesized that neuromuscular training would produce a positively greater effect than yoga training on motor qualities in pubertal tribal girl students.
4. It was hypothesized that there would not be significant changes among the control group on the selected motor qualities.

## DELIMITATION

The study was delimited to the following.

- The study is delimited to selected pubertal tribal girl students from the Government Vocational Higher Secondary School in Kalpetta, Wayanad, Kerala.
- Total sample selection includes 67 tribal girl students, with 62 identified as pubertal tribal girls.
- The final sample consists of 45 pubertal tribal students (N=45).

- The study investigates the effects of two independent variables: neuromuscular training and yoga training.
- The yoga training includes selected asanas, pranayama and meditation.
- The dependent variables are limited to specific motor qualities: speed, agility, flexibility, muscular strength endurance, cardiorespiratory endurance and balance.

**LIMITATION**

- Socio-economic background is not taken into consideration.
- The previous background of the subject on other physical activity has not been taken into consideration.
- The effect of uncontrollable factors like heredity and environmental factors were also considered as a limitation of the study
- Certain factors like daily routine, climate contention, and environmental factors were not taken into consideration.

**METHODOLOGY**

To fulfil the purpose of the study, forty-five tribal girl students were randomly selected from Government Vocational Higher Secondary School, Kalpetta, Wayanad, Kerala, India and their age ranged from twelve to fifteen years. Only the tribal girl students who were willing to participate in the study were included as samples.

The selected subjects were divided into three equal groups consisting fifteen each. Experimental group I (n = 15) underwent neuromuscular training, Experimental group II underwent yoga training for sixteen weeks. Group III (n = 15) acted as a control group, the subjects in the control group were not engaged in any training programme.

The influence of neuromuscular training and yoga training was assessed on selected motor qualities. The following dependent variables were assessed by using standardarised tests.

- Speed was assessed by 50 meters dash and the unit of measurement was in seconds
- Agility was measured by 4 x 10 meters shuttle run and the unit of measurement was in seconds

- Flexibility was measured by sit and reach test and unit of measurement was in centimetres
- Muscular strength endurance was measured by modified sit-ups test and the unit of measurement was in counts per one minute
- Cardiorespiratory endurance was measured by Coopers 12 minutes run or walk test and the unit of measurement was in meters.
- Balance was measured by stork stand test and the unit of measurement was in seconds.

The treatment groups spent a total of sixteen weeks, four days a week, completing the required training.

The pre and post-test data on all the variables were tested for significance by applying t-test. No attempt was made to equate the group in any manner and analysis of covariance (ANCOVA) was used to compare the effects of neuromuscular training and yoga training. Whenever the obtained 'F' ratio was found to be significant for adjusted post-test means, Scheffe's post hoc test was used to determine which of the paired mean differences was significant. The level of significance for the investigation was fixed at 0.05 confidence level.

**FINDINGS OF THE STUDY**

The findings of this study indicate that both neuromuscular training and yoga training positively impacted the motor qualities of pubertal tribal girls over sixteen weeks, enhancing agility, flexibility, muscular strength endurance, cardiorespiratory endurance, and balance. The significant improvements in agility and flexibility can be attributed to the dynamic movements involved in neuromuscular training and the postural practices of yoga. Additionally, the increase in muscular strength endurance and cardiorespiratory endurance suggests that both training methods effectively addressed essential components of physical fitness. However, no significant improvement in speed due to yoga training was observed.

## CONCLUSIONS

The study's results led to the following conclusions being made:

1. It was concluded that the sixteen weeks of Neuromuscular training produced significant changes in the motor qualities of pubertal tribal girl students.
2. It was concluded that sixteen weeks of yoga training produced significant changes in the motor qualities of pubertal tribal students except for speed.
3. Neuromuscular training was found to be better than yoga training in producing significant changes in motor qualities such as speed, agility, cardiovascular endurance and muscular strength endurance of pubertal tribal girl students.
4. Only in flexibility and balance, yoga training improved better than the neuromuscular training of pubertal tribal girl students.

## RECOMMENDATIONS

The following recommendations have been made based on the results of the present study.

- The same experimentation may be conceded for male gender.
- The same experimentation may be recommended to evaluate biochemical and physiological changes.
- The same training may be conducted with different training volumes and loads.
- The study can assist educators, coaches, and policymakers in designing specialized training programs that cater to the unique needs of tribal girl students.
- Identification and nurturing of athletic talent within tribal communities in the developmental stage, providing opportunities for tribal youth to excel in sports at regional, national, or even international levels.
- Schools with limited facilities can implement these training programs to enhance motor skills.

## PUBLICATIONS

1. Sobha and Nandhini (2024), Influence of yoga practices on balance and co-ordination among pubertal tribal students, Salud, Ciencia Y Tecnologia-Serie de Conferences, ISSN NO:2953-4860,3,877.

**2.** Sobha and Nandhini (2024), Influence of Neuromuscular and Yoga Training on Endurance and Abdominal Strength among Pubertal Tribal Students, AF JBS African Journal of Biological Sciences, ISSN NO: 2663-2187,14,515-539.

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